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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/820,416

Filing Date: April 07, 2004

Appellant(s): ENDLER ET AL.

Thomas F. Lebens
For Appellants

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 7, 2010 appealing from the Office action mailed January 12, 2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:
Claims 1-2, 4-11, 26-28, 30, 32-35, 37-40, and 42-44.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

| | | |
|--------------|--------------------|---------|
| 2002/0030665 | ANO | 03-2002 |
| 2003/0146915 | BROOK et al. | 08-2003 |
| 2004/0001111 | FITZMAURICE et al. | 01-2004 |
| 2004/0264579 | BHATIA et al. | 12-2004 |
| 6,628,313 | MINAKUSHI et al. | 09-2003 |
| 7,107,516 | ANDERSON et al. | 09-2006 |
| WO 02/21529 | BARBIERI | 03-2002 |

Definition of "capture." Merriam-Webster's Collegiate Dictionary. 10th ed. 2001.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Particularly regarding claim 11, the claim limitations reciting “means for displaying...,” “means for simultaneously displaying...”, and “means for scrolling...” are means plus function limitations that invoke 35 U.S.C. 112, sixth paragraph. However, the written description recites numerous structures, materials, or acts that could potentially be considered “means for displaying...” and “means for simultaneously displaying...” (e.g. a “control module,” “rendering module,” “content capturing module,” “storage module,” “interface module,” “content detection module,” and “spherical display,” described in paragraphs 0030 and 0046 of the published application) but fails to clearly link or associate the disclosed structures, materials, or acts to the claimed functions such that one of ordinary skill in the art would recognize exactly which of the recited structures, materials, or acts perform the claimed functions. Likewise, the written description recites numerous structures, materials, or acts that could potentially be considered “means for scrolling...” (e.g. a “playback ring,” “control knob,” and “rendering module,” described in paragraphs 0030 and 0046 of the published application) but fails to clearly link or associate the disclosed structures, materials, or acts to the claimed functions such that one

of ordinary skill in the art would recognize exactly which recited structures, materials, or acts perform the claimed functions.

Claim Rejections - 35 USC § 103

Claims 1, 2, 6, 9, 10, 11, 30, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,628,313 to Minakuchi et al. (hereinafter "Minakuchi") and U.S. Patent Application Publication No. 2004/0001111 to Fitzmaurice et al. (hereinafter "Fitzmaurice"), as supported by "Merriam Webster's Collegiate Dictionary, Tenth Edition" (hereinafter "Webster").

Regarding claims 1 and 11, Minakuchi describes an information retrieval method and system in which main information, specified by the user, is displayed along with sub-information related to the main information (see e.g. column 2, line 65 – column 3, line 21). Minakuchi particularly discloses that the main information and its associated sub-information are presented via a "virtual sphere" (see e.g. column 8, line 63 – column 9, line 14; and FIG. 5). Like claimed, Minakuchi discloses: means for displaying a first content (i.e. "main information") on a flat display surface within a spherical display, i.e. virtual sphere (see e.g. column 2, line 65 – column 3, line 12; column 8, line 63 – column 9, line 14; and reference number 201 in FIG. 5); means for simultaneously displaying a second content (i.e. "sub-information") on an outside surface of the spherical display, i.e. virtual sphere, wherein the spherical display surface is convex (see e.g. column 2, line 65 – column 3, line 21; column 8, line 63 – column 9, line 14; and reference number 203 in FIG. 5); and means for scrolling through one of the first content and the second content (e.g. "rotating" the spherical display surface to scroll through the sub-information) based

on instructions while displaying the other one of the first content and the second content (see e.g. column 9, lines 1-14), wherein the spherical display surface is imposed over the flat display surface such that the first content and the second content are distinctly and simultaneously viewed (see e.g. FIG. 5). Minakuchi further discloses that a “memory device” stores the first content, and further suggests that the memory device is in direct physical communication with a housing comprising the display device (see e.g. column 2, line 65 – column 3, line 20; and column 5, line 25 – column 6, line 4). A commonly understood definition of “capture,” with respect to the art, is “to record in a permanent file (as in a computer)” (see e.g. the definition of “capture” provided by Webster). The memory device of Minakuchi is thus considered a “content capturing device,” given the broadest, most reasonable definition of such a device; the memory device of Minakuchi is used for capturing content, i.e. recording content in a permanent file. Accordingly, Minakuchi further teaches capturing the first content with a content capturing device (i.e. a memory device), as is claimed. Minakuchi thereby teaches a method and system similar to that recited in claims 1 and 11, respectively. Minakuchi, however, does not explicitly disclose that the second content (i.e. the sub-information displayed on the outside surface of the “virtual sphere”) is displayed on an outside surface of a *physical* spherical display surface, wherein the spherical display surface is convex, as is recited in claim 1. Nevertheless, such physical spherical displays are known in the art.

For example, Fitzmaurice demonstrates displaying content via a volumetric display, which can take the form of a physical spherical display (see e.g. paragraph 0024, and FIG. 1). Fitzmaurice further teaches displaying first content on a flat display surface within the spherical display and second content on an outside surface of a physical spherical display surface of the

spherical display, wherein the spherical display surface is convex (see e.g. paragraphs 0012-0014; paragraph 0025; paragraph 0027; and FIG. 2).

It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi and Fitzmaurice before him at the time the invention was made, to implement the information retrieval method of Minakuchi on the volumetric display of Fitzmaurice, i.e. to display the first content on a flat display surface within the volumetric display and to simultaneously display the second content on an outside surface of a physical display surface of the volumetric display. It would have been advantageous to one of ordinary skill to utilize this combination because such a volumetric display allows a user to have a *true* three-dimensional view of the content, as is taught by Fitzmaurice (see e.g. paragraph 0024). Accordingly, Minakuchi and Fitzmaurice teach a method and system like that of claims 1 and 11, respectively.

As per claim 2, Minakuchi further teaches storing the first content (i.e. “main information”) and the second content (i.e. “sub-information”) in a storage device (see e.g. column 2, line 65 – column 3, line 12; and column 5, lines 56-58).

As per claim 6, Minakuchi suggests that the above-described method and system can be applied to search through pictures (see e.g. column 1, line 64 – column 2, line 35). Minakuchi suggests that the second content (i.e. the “sub-information”) comprises a plurality of icons or thumbnails representative of such pictures from which the user may select (see e.g. FIGS. 5-7; column 6, lines 33-40; column 9, lines 1-14; and column 9, lines 34-58). In such situations, the second content is one of a video stream and digital image, like claimed.

Concerning claim 9, Minakuchi demonstrates that the second content (i.e. the “sub-information”) comprises a plurality of icons or thumbnails from which the user may select (see

e.g. FIGS. 5-7; column 6, lines 33-40; column 9, lines 1-14; and column 9, lines 34-58). The second content described by Minakuchi is thus considered “menu information” like claimed.

With respect to claim 10, Minakuchi demonstrates that the spherical display surface displays the second content (i.e. the “sub-information”) in a three dimensional viewpoint (see e.g. column 8, lines 63-67; and reference number 203 in FIG 5). Fitzmaurice similarly suggests that the *physical* spherical display surface displays content in a three dimensional viewpoint (see e.g. paragraphs 0012-0014 and FIG. 2).

As per claims 30 and 35, Fitzmaurice demonstrates that the spherical display is semi-spherically shaped, wherein the spherical display surface substantially spans the semi-spherical shape of the spherical display and the flat display surface is coupled to the physical spherical display surface and spans a diameter of the physical spherical display surface (see e.g. paragraph 0025 and FIG. 2).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, and Webster, which is described above, and also over U.S. Patent No. 7,107,516 to Anderson et al. (hereafter “Anderson”).

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1, used for searching for information, in which first content provided by a content capture device is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Minakuchi suggests that such content can comprise pictures, as is described above (see e.g. the rejection for claim 6). Minakuchi, however, discloses that the content capture device providing the content is

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a memory device (see e.g. the rejection for claim 1), and not a digital camera as required in claim 4.

Nevertheless, providing content (i.e. pictures) from a digital camera that is in direct physical communication with a display device is well known in the art. For example, Anderson demonstrates directly coupling a display device to a digital camera for the purpose of viewing and searching content captured by the camera (see e.g. column 2, lines 30-51; and column 4, lines 19-44).

Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, and Anderson before him at the time the invention was made, to couple a camera to the spherical display of Minakuchi and Fitzmaurice, since this would allow the user to view on the display content captured by the user, as is demonstrated by Anderson. Minakuchi, Fitzmaurice, Webster, and Anderson, in combination, are thus considered to teach a method like that of claim 4.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Anderson, and Webster, as is described above, and also over PCT Publication No. WO 02/21529 to Barbieri.

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Anderson further teaches directly coupling a content capture device (i.e. a digital camera) to the spherical display for the purpose of searching

through and displaying images captured by the content capture device, as is described above (see the rejection for claim 4). Minakuchi, Fitzmaurice, Webster, and Anderson, however, do not explicitly disclose that the content capturing device is a video camera, like recited in claim 5. Nevertheless, capturing video streams with a video camera, and then searching through the captured information is well known in the art.

For example, Barbieri teaches displaying a digital video image (considered analogous to the “main information” of Minakuchi) and determining similar video images (considered analogous to the “sub-information” of Minakuchi) that are associated with the video image (see e.g. page 2, lines 11-34). Such digital video images are necessarily taken with a content capturing device, i.e. a digital video camera, as is well-known in the art (see e.g. page 9, lines 31-34 of Barbieri).

Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri before him at the time the invention was made, to apply the spherical display of Minakuchi and Fitzmaurice to search for particular video images within a video stream captured by a digital video camera, like taught by Barbieri. That is, it would have been obvious to modify the spherical display of Minakuchi and Fitzmaurice such that the main information (i.e. the first content) is a video image, which has been captured by a content capturing device, i.e. a digital video camera. It would have been advantageous to one of ordinary skill to apply the interface of Minakuchi to search video, because video search functionality is becoming useful due to the increase of multimedia data that can be stored in home devices, as is taught by Barbieri (see e.g. page 1). Minakuchi,

Fitzmaurice, Webster, Anderson, and Barbieri, in combination, are thus considered to teach a method like that of claim 5.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, and Webster, as is described above, and also over U.S. Patent Application Publication No. 2002/0030665 to Ano.

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. This second content is scrolled in response to instructions based on an input device, e.g. a trackball (see e.g. paragraph 0082). As such, Minakuchi does not explicitly disclose that these instructions for scrolling are based on rotating a playback ring or knob, as is expressed in claims 7-8.

Nevertheless playback rings and knobs are well-known types of input devices used for scrolling displayed information. For example, Ano describes a playback ring (i.e. a “wheel”), considered a type of knob, which is used in conjunction with, e.g. a trackball, to scroll through content displayed on a screen (see e.g. paragraphs 0005, 0009, and 0098-0101).

It would have therefore been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, and Ano before him at the time the invention was made, to apply the playback ring of Ano to scroll through the displayed content of Minakuchi and Fitzmaurice, i.e. to rotate the spherical display. It would have been advantageous to one of ordinary skill to use such a playback ring, because it allows the user to more efficiently scroll

through content, as is demonstrated by Ano (see e.g. paragraphs 0006-0009). Minakuchi, Fitzmaurice, Webster, and Ano, in combination, are thus considered to teach methods like recited in claims 7 and 8.

Claims 32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5).

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1 and a system like that of claim 11, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Barbieri particularly teaches that the first content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri, however, do not explicitly teach controlling at least one of the direction and speed of such a video stream, as is required by claims 32 and 37. Nevertheless proving users the ability to control the direction and speed of playback of a video stream (by e.g. fast forward, reverse, etc. functions) is notoriously well known in the art. The Examiner takes OFFICIAL NOTICE of this teaching. Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Fitzmaurice, Anderson, and Barbieri before him at the time the invention was made, to allow a viewer watching the first content (e.g. a video stream) displayed by the spherical display of Minakuchi, Fitzmaurice, Anderson, and Barbieri to change the direction or speed of playback of the content, like known

in the art. It would have been advantageous to one of ordinary skill to apply this modification because it allows the user to, for example, skip over parts of the content (i.e. by fast forward operations) that are not interesting to the user, as is known in the art. Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri are thus considered to further teach - to one of ordinary skill in the art - a method and system like that of claims 32 and 37, respectively.

Claims 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5), and also over U.S. Patent Application Publication No. 2004/0264579 to Bhatia et al. (hereafter "Bhatia").

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1 and a system like that of claim 11, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Barbieri particularly teaches that the first content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri, however, do not explicitly disclose that multiple video feeds are simultaneously displayed, as is required by claims 33 and 38. Nevertheless, simultaneously displayed multiple video feeds are well known in the art. For example, Bhatia demonstrates a method for simultaneously displaying a plurality of video streams (see e.g. paragraphs 0011-0014). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Barbieri, Anderson, and Bhatia before him at

the time the invention was made, to apply the display of Minakuchi, Fitzmaurice, Anderson, and Barbieri to simultaneously display a plurality of video feeds, because it is a useful feature in video presentation systems, as taught by Bhatia (see e.g. paragraphs 0004-007). Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Bhatia, in combination, are thus considered to teach a method and system like that of claims 33 and 38, respectively.

Claims 34 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5), and also over U.S. Patent Application Publication No. 2003/0146915 to Brook et al. (hereafter “Brook”).

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1 and a system like that of claim 11, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Barbieri particularly teaches that the first content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri, however, do not explicitly disclose that the spherical display is configured to apply special effects (i.e. sepia tone, black and white tone, and/or slow shutter effect) to a portion of this content, as is required by claims 34 and 39. Nevertheless applying such special effects to video is well known in the art. For example, Brook demonstrates applying sepia tone and black and white special effects (see e.g. paragraph 0186). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi,

Webster, Fitzmaurice, Anderson, Barbieri, and Brook before him at the time the invention was made, to modify the display of Minakuchi, Fitzmaurice, Anderson, and Barbieri to apply special effects to the content, like taught by Brook. It would have been advantageous to one of ordinary skill to apply this modification because it allows the user to, for example, change the appearance of the content to suit his or her taste, as is demonstrated by Brook. Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Brook, in combination, are thus considered to teach a method and system like that of claims 34 and 39, respectively.

Claims 26-28 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5), and also over the teachings of Ano, which are also described above.

Specifically regarding claim 26, Minakuchi describes a spherical display for simultaneously displaying first content and second content, wherein the spherical display is convex, wherein the second content is displayed on the outside surface of the spherical display, and wherein the first and second content are stored in a storage module, as is described above (see e.g. the rejection for claim 1). Minakuchi suggests that the second content (i.e. the “sub-information”) can comprise a plurality of icons or thumbnails representative of pictures from which the user may select (see e.g. FIGS. 5-7; column 6, lines 33-40; column 9, lines 1-14; and column 9, lines 34-58). Such second content is thus a menu comprising a plurality of images, i.e. Minakuchi teaches simultaneously displaying image and menu information on an outside surface of a spherical display. Fitzmaurice teaches displaying such content on a *physical* spherical

display, wherein the physical spherical display is convex, and wherein content is displayed on the outside surface of the spherical display, as is described above (see e.g. the rejection for claim 1). Also, Barbieri teaches applying such an interface to search for video content, i.e. such that the second content includes a video content, as is also described above (see e.g. the rejection for claim 5). Anderson teaches directly coupling a content capture device to the spherical display for the purpose of searching a displaying images captured by the content capture device (see e.g. the rejection for claim 4). Accordingly, the above-described combination of Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri teach a device similar to that of claim 26, which comprises: a content capturing device for capturing first content (i.e. video); a physical spherical display for simultaneously image (i.e. video) and menu information wherein the physical spherical display is convex, and wherein the video and menu information is displayed on the outside surface of the spherical display; and a storage module to store the first content and second content. Minakuchi discloses that this second content is scrolled (i.e. the spherical display is rotated) in response to instructions based on an input device, e.g. a trackball, as is described above. As such, Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri do not explicitly disclose that these instructions for scrolling are based on rotating a playback ring, as is expressed in claim 26. Nevertheless playback rings are well-known types of input devices used for scrolling displayed information. For example, Ano describes a playback ring (i.e. a “wheel”), which is used in conjunction with, e.g. a trackball, to scroll through content displayed on a screen (see e.g. paragraphs 0005, 0009, and 0098-0101). It would have therefore been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Barbieri, Anderson, Fitzmaurice, and Ano before him at the time the invention was made, to apply the

playback ring of Ano to scroll through the displayed content of Minakuchi and Barbieri, i.e. to rotate the spherical display. It would have been advantageous to one of ordinary skill to use such a playback ring, because it allows the user to more efficiently scroll through content, as is demonstrated by Ano (see e.g. paragraphs 0006-0009). Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano are thus considered to teach – to one of ordinary skill in the art – a device like that of claim 26.

As per claim 27, Minakuchi demonstrates displaying the second content, i.e. menu information, with a three dimensional effect to distinguish it from other content (see e.g. FIG. 5). Barbieri teaches that such content could include a video stream (see e.g. the rejection for claim 5). Accordingly, the combination of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano described in the previous paragraph is further considered to teach a device like that of claim 27.

Concerning claim 28, Minakuchi demonstrates displaying the second content, i.e. menu information, overlaid on top of other content (see e.g. FIG. 5). Barbieri teaches that such content could include a video stream (see e.g. the rejection for claim 5). Accordingly, the above-described combination of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano is further considered to teach a device like that of claim 28.

As per claim 40, Fitzmaurice demonstrates that the display surface is semi-spherically shaped, wherein the display surface substantially spans the semi-spherical shape of the physical display and the flat display surface is coupled to the physical display and spans a diameter of the physical display (see e.g. paragraph 0025 and FIG. 2).

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano, which is described above.

As described above, Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano teach a device like that of claim 26, used for searching for information, in which content is displayed on the outside surface of a spherical display. Barbieri particularly teaches that the content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano, however, do not explicitly teach controlling at least one of the direction and speed of such a video stream, as is required by claim 42. Nevertheless proving users the ability to control the direction and speed of playback of a video stream (by e.g. fast forward, reverse, etc. functions) is notoriously well known in the art. The Examiner takes OFFICIAL NOTICE of this teaching. Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano before him at the time the invention was made, to allow a viewer watching the content (e.g. a video stream) displayed by the spherical display of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano to change the direction or speed of playback of the content, like known in the art. It would have been advantageous to one of ordinary skill to apply this modification because it allows the user to, for example, skip over parts of the content (i.e. by fast forward operations) that are not interesting to the user, as is known in the art. Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano are thus further considered to teach – to one of ordinary skill in the art – a device like that of claim 42.

Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano, which is described above, and also over U.S. Patent Application Publication No. 2004/0264579 to Bhatia et al. (hereafter "Bhatia").

As described above, Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano teach a device like that of claim 26, used for searching for information, in which content is displayed on the outside surface of a physical display. Barbieri particularly teaches that the content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano, however, do not explicitly disclose that multiple video feeds are simultaneously displayed, as is required by claim 43. Nevertheless, simultaneously displayed multiple video feeds are well known in the art. For example, Bhatia demonstrates a method for simultaneously displaying a plurality of video streams (see e.g. paragraphs 0011-0014). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Bhatia before him at the time the invention was made, to apply the physical display of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano to simultaneously display a plurality of video feeds, because it is a useful feature in video presentation systems, as taught by Bhatia (see e.g. paragraphs 0004-007). Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Bhatia are thus considered to teach – to one of ordinary skill in the art – a device like that of claim 43.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano, which is described above, and also over U.S. Patent Application Publication No. 2003/0146915 to Brook et al. (hereafter "Brook").

As described above, Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri and Ano teach a device like that of claim 26, used for searching for information, in which content is displayed on the outside surface of a physical spherical display. Barbieri particularly teaches that the content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 3). Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano, however, do not explicitly disclose that the physical spherical display is configured to apply special effects (i.e. sepia tone, black and white tone, and/or slow shutter effect) to a portion of this content, as is required by claim 44. Nevertheless applying such special effects to video is well known in the art. For example, Brook demonstrates applying sepia tone and black and white special effects (see e.g. paragraph 0186). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Brook before him at the time the invention was made, to modify the display of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano to apply special effects to the content, like taught by Brook. It would have been advantageous to one of ordinary skill to apply this modification because it allows the user to, for example, change the appearance of the content to suit his or her taste, as is demonstrated by Brook. Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Brook are thus considered to teach – to one of ordinary skill in the art – a device like that of claim 44.

(10) Response to Argument

The Examiner respectfully disagrees with each of the contentions raised by the Appellants in the Appeal Brief. The following response represents the Examiner's rationale for the disagreement, with headings and subheadings paralleling the headings and subheadings utilized in the Appellants' Brief pursuant to MPEP § 1207.02(A)(10).

Issue 1: Claim 11 is unpatentable under 35 U.S.C. § 112, second paragraph.

With regard to the pending 35 U.S.C. § 112, second paragraph, rejection to claim 11, the Appellants submit that the specification provides a sufficient description linking the claim limitations to described structures that perform the claimed functions. The Appellants particularly suggest that the specification's description of a "client device 110" clearly links the client device 110 to the claimed "means for displaying..." and to the claimed "means for simultaneously displaying...." The Appellants also suggest that the specification's description of a "playback ring 530" and "control knob 525" clearly links the playback ring 530 and control knob to the claimed "means for scrolling...."

The Examiner, however, respectfully disagrees. With respect to the claimed "means for displaying..." and the "means for simultaneously displaying...", the specification describes other items, in addition to the client device, which constitute a "means for displaying..." and a "means for simultaneously displaying...." For example, the specification describes a "rendering module 310" that "produces signals that present content to a viewer" (Specification as filed, page 9, lines 19-21), and which therefore also appears to be a "means for displaying..." and a "means for simultaneously displaying..." like claimed. The specification describes an "interface module

340" that "transmits rendering information from the rendering module 310 to present the content to a viewer" (Specification as filed, page 10, lines 16-21), and which could also be considered a "means for displaying..." and a "means for simultaneously displaying..." like claimed. In addition, the Specification describes a "spherical display 520" that is "configured to simultaneously display video/image content and functional menu driven content" (Specification as filed, page 12, lines 20-22), and which thus also serves as a "means for displaying..." and a "means for simultaneously displaying..." like claimed.

The Appellants argue that the rendering module 110 is utilized by the means for displaying (i.e. the client device) but is not itself a "means for displaying...." However, nothing in the specification or claims precludes the rendering module itself, or the interface module or spherical display, from being considered a "means for displaying..." like claimed. The specification provides no guidance delineating what is intended to serve as the claimed "means for displaying..." and the "means for simultaneously displaying...." The 35 U.S.C. 112, second paragraph rejection to claim 11 should thus be maintained; the written description fails to clearly link or associate the disclosed structure, material, or acts to the functions performed by the claimed "means for displaying..." such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed functions.

By similar rationale, the specification also fails to clearly link or associate the disclosed structure, material, or acts to the function performed by the claimed "means for scrolling..." such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function. The Appellants argue that "[n]o reasons are provided by the Examiner for the maintenance of his rejection of the limitation 'means for scrolling...' and none appear to the

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Applicant" (Appeal Brief, page 13). On the contrary, however, the final Office Action provided reasoning for the maintenance of the rejection, noting that "it is unclear as to whether the 'playback ring,' 'control knob,' or e.g. the 'rendering module' could be considered 'means for scrolling through one of the first and the second content based on instructions...' like claimed" (Final Office Action, mailed 1/12/2010, page 21). This reasoning still stands. Like with respect to the claimed "means for displaying...," the specification recites numerous items that can potentially be considered "means for scrolling...," but fails to clearly disclose which of the items are intended to be linked to the "means for scrolling..." recited in claim 11.

Like asserted by Appellants, the specification describes a playback ring and a control knob that can be considered means for scrolling. (Though the specification does not explicitly disclose that the ring or knob is used to scroll through one of a first content and a second content based on instructions while displaying the other one of the first content and the second content, like required by claim 11.). The specification also describes a "rendering module" which "produces signals that present content to a viewer" and which thus understandably is applied to render the scrolling through one of the first content and the second content, while rendering the other of the first content and the second content. The specification thus recites numerous items that can potentially be considered "means for scrolling...," but fails to clearly disclose which of the items are intended to be linked to the "means for scrolling..." recited in claim 11.

The Examiner thus respectfully maintains that the specification fails to clearly link or associate the limitations of claim 11 reciting "means for displaying...," "means for simultaneously displaying...," and "means for scrolling..." to the claimed functions such that

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one of ordinary skill in the art would recognize what structure, material or acts perform the claimed function.

Issue 2: Claims 1, 2, 6, 9, 10, 11, 30, and 35 are unpatentable under 35 U.S.C. § 103(a)

The Examiner respectfully disagrees with the Appellants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35 for the following reasons.

Claim 1

Regarding the pending 35 U.S.C. §103 rejection to claim 1, the Appellants argue that Minakuchi, Webster, and Fitzmaurice fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The pending rejection relies on Fitzmaurice to supply these teachings. The Appellants however submit that "[b]oth the scene and the widgets of Fitzmaurice are displayed 'inside the enclosure' and 'within a volumetric display'" (Appeal Brief, page 15), and that "both the widgets and the scene 12 are displayed using the same set of voxels and accordingly on the same display, 'within the volumetric display,' wherein the volumetric display does not comprise a physical spherical display, and further does not describe or suggest displaying content on an outside surface of a physical spherical display surface of the display" [sic] (Appeal Brief, page 15). The Appellants thus appear to argue: (1) that Fitzmaurice does not teach *two* distinct display surfaces like claimed, i.e. a flat display surface on which first content is displayed, and an outside surface of a physical spherical display surface on which second content is displayed; and (2) that Fitzmaurice does not teach displaying content on an

outside surface of a physical spherical display surface of a display. The Examiner, however, respectfully disagrees with the Appellants' arguments.

With respect to the Appellants' first argument - that Fitzmaurice does not teach a flat display surface on which first content is displayed and an outside display surface of a physical spherical display on which second content is displayed - Fitzmaurice teaches applying voxels to display widgets and other content (i.e. scene) (see e.g. paragraph 0027). Appellants repeatedly assert that "the same set of voxels is used to display both the widgets and the scene." While this is facially true, it belies Fitzmaurice's teaching that different voxels within the "set" of voxels form different surfaces that display different items. Outer surface voxels can be applied to display widgets (see e.g. paragraph 0028). Different, inner voxels, including those that form a plane or "desktop," can be applied to display other content (see e.g. paragraphs 0025 and 0029 and FIG. 2). So, two distinct sub-sets of voxels within the "set" in fact can be applied to display different elements. The voxels form different display surfaces, given the broadest, most reasonable interpretation of the claimed term "display surface" - the voxels form a surface upon which content can be displayed, including an outer display surface that displays widgets, and a second flat display surface that displays other content. The Examiner thus respectfully maintains that Fitzmaurice teaches teach a flat display surface on which first content is displayed and an outside display surface of a physical spherical display on which second content is displayed.

With respect to the Appellants' second argument - that Fitzmaurice does not teach displaying content on an *outside* surface of a physical spherical display surface of a display - Appellants appear to believe that the qualifier "outside" with respect to the claimed "surface" means that the surface cannot be "within" another entity, or that it must be exposed to air. But

this is too narrow an understanding of the term. The surface formed by the outermost voxels, upon which widgets can be displayed, can be considered to constitute an outside surface, as is demonstrated by the fact that Fitzmaurice itself repeatedly and unequivocally refers to the surface as an outer or outside surface:

The present invention is directed to providing two-dimensional (2D) widgets in three-dimensional (3D) displays and, more particularly, to mapping a 2D widget into a volumetric display at a position where it can be easily used, such as on the outside surface of the volumetric display inside an enclosure for the display. (Paragraph 0003, emphasis added).

It is an aspect of the present invention to place the widgets on an outside surface of a volumetric display inside a protective enclosure. (Paragraph 0012, emphasis added).

The widgets are placed on the shell or outer edge of a volumetric display, in a ring around the outside bottom of the display, in a plane within the display and/or at the users focus of attention. Virtual 2D widgets are mapped to volumetric display voxels and control actions in the 3D volume are mapped to controls of the widgets. (Paragraph 0014, emphasis added).

The voxels within the display can be arranged in a number of different ways as depicted in FIGS. 6A and 6B where FIG. 6A shows concentric layers 90 and 92 of voxels and FIG. 6B shows rectilinearly stacked layers 94, 96, 98 and 100 of voxels. In these examples voxels 102, 104, 106, 108 and 110 and voxels 112, 114, 116, 118 and 120 are surface voxels that might be used for part of a 2D widget displayed on the outside

surface of the display inside the enclosure.
(Paragraph 0027, emphasis added).

This is not an idiosyncratic use of the term, “outside.” Like individual computer components (e.g. a processor) that have outside surfaces even though they are generally inside a computer case, the outermost voxels form a surface that is outer to other, inner voxels, and can thus be considered to form an outer surface even though inside a protective enclosure.

Appellants repeatedly note that that widgets described by Fitzmaurice exist within a volumetric display “enclosure.” Regardless, the widgets can still be considered to be displayed on the outer surface of the enclosure, given the broadest, most reasonable interpretation of such phraseology. This is plainly demonstrated by the fact that the Fitzmaurice Patent Application Publication itself is entitled, “WIDGETS DISPLAYED AND OPERABLE ON A SURFACE OF A VOLUMETRIC DISPLAY ENCLOSURE” (emphasis added). The Fitzmaurice invention is directed to placing widgets on an outer surface that in order to allow direct and simple interaction (see e.g. paragraph 0014).

Moreover, Fitzmaurice describes other, alternative embodiments whereby widgets are displayed (via LCD display panels or projection) on an outside surface of a physical spherical display surface (see e.g. paragraph 0038).

The Examiner further respectfully notes that specification of the instant application does not explicitly disclose “displaying a second content on an outside surface of a physical spherical display surface,” and in fact discloses “simultaneously display[ing] a second content on a spherical display surface within the spherical display” (Abstract, emphasis added). Just as the specification though would nevertheless support a teaching of “simultaneously displaying a second content on an outside surface of a physical spherical display surface,” so too would

Fitzmaurice's disclosure that "[i]t is an aspect of the present invention to place the widgets on an outside surface of a volumetric display inside a protective enclosure" (paragraph 0012).

Regarding this latter point, the Appellants argue that "the specification specifically recites, '[t]he display area 615 includes a spherical display surface 625 and a flat display surface 620,' and that 'FIGS 7A-7D and 8A-8D illustrates different embodiments of the spherical display device, and clearly demonstrate 'displaying a second content on an outside surface of a physical spherical display surface'" (Appeal Brief, page 17). In response, the Examiner respectfully submits that the fact that the specification describes a display area that includes a spherical display surface and a flat display surface does not disclose or suggest the particular limitation of displaying second content on an outside surface of a physical spherical display surface. Similarly, FIGS 7A-7D and 8A-8D do not demonstrate the particular limitation of displaying second content on an outside surface of a physical spherical display surface any more than FIG. 1 or FIG. 2 of Fitzmaurice. Accordingly, the Examiner respectfully maintains that, just as the specification would nevertheless support a teaching of "simultaneously displaying a second content on an outside surface of a physical spherical display surface," so too would e.g. Fitzmaurice's disclosure that "[i]t is an aspect of the present invention to place the widgets on an outside surface of a volumetric display inside a protective enclosure" (paragraph 0012).

Accordingly, the Examiner respectfully submits that Fitzmaurice in fact teaches simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner therefore respectfully maintains the 35 U.S.C. §103 rejection to claims 1, 2, 6, 9, 10, 11, 30, and 35.

Claim 11

Regarding the pending 35 U.S.C. §103 rejection to claim 11, the Appellants argue that Minakuchi, Webster, and Fitzmaurice fail to teach "means for simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Appellants' arguments are substantially identical to their argument presented with respect to claim 1. Accordingly, under the rationale presented above in response to the Appellants' arguments concerning claim 1, the Examiner respectfully disagrees with the Appellants' arguments with respect to claim 11 and respectfully maintains that Minakuchi, Webster, and Fitzmaurice teach "means for simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed.

Claims 2, 6, 9, 10, 30, and 35

The Appellants argue that claims 2, 6, 9, 10, 30, and 35 overcome the cited art because of their ultimate dependence from claims 1 and 11. However, as described above, the Examiner respectfully disagrees with the Appellants' arguments concerning claims 1 and 11, and thus submits that claims 2, 6, 9, 10, 30, and 35 are unpatentable.

Issue 3: Claim 4 is unpatentable under 35 U.S.C. § 103(a)

The Appellants argue that claim 4 overcomes the cited art because of its ultimate dependence from claim 1. However, as described above, the Examiner respectfully disagrees

with the Appellants' arguments concerning claim 1, and thus submits that claim 4 is unpatentable.

Issue 4: Claims 5, 32 and 37 are unpatentable under 35 U.S.C. § 103(a)

The Appellants argue that claims 5, 32, and 37 overcome the cited art because of their ultimate dependence from claims 1 and 11. However, as described above, the Examiner respectfully disagrees with the Appellants' arguments concerning claims 1 and 11, and thus submits that claims 5, 32, and 37 are unpatentable.

Issue 5: Claims 7-8 are unpatentable under 35 U.S.C. § 103(a)

The Appellants argue that claims 7-8 overcome the cited art because of their ultimate dependence from claim 1. However, as described above, the Examiner respectfully disagrees with the Appellants' arguments concerning claim 1, and thus submits that claims 7-8 are unpatentable.

Issue 6: Claims 33 and 38 are unpatentable under 35 U.S.C. § 103(a)

The Appellants argue that claims 33 and 38 overcome the cited art because of their ultimate dependence from claims 1 and 11. However, as described above, the Examiner respectfully disagrees with the Appellants' arguments concerning claims 1 and 11, and thus submits that claims 33 and 38 are unpatentable.

Issue 7: Claims 34 and 39 are unpatentable under 35 U.S.C. § 103(a)

The Appellants argue that claims 34 and 39 overcome the cited art because of their ultimate dependence from claims 1 and 11. However, as described above, the Examiner respectfully disagrees with the Appellants' arguments concerning claims 1 and 11, and thus submits that claims 34 and 39 are unpatentable.

Issue 8: Claims 26-28, 40, and 42 are unpatentable under 35 U.S.C. § 103(a)

The Examiner respectfully disagrees with the Appellants' arguments concerning claims 26-28, 40, and 42 for the following reasons.

Claim 26

Regarding the pending 35 U.S.C. §103 rejection to claim 26, the Appellants argue that Minakuchi, Webster, Fitzmaurice, Barbieri, Anderson, and Ano fail to teach "a physical spherical display for simultaneously displaying a video stream and menu information comprising a flat display surface and a convex physical spherical display surface, wherein the video stream is displayed on the flat display surface and the menu information is displayed on the outside surface of the convex spherical display surface," as is claimed. The Appellants' arguments are substantially identical to their argument presented with respect to claim 1. Accordingly, under the rationale presented above in response to the Appellants' arguments concerning claim 1, the Examiner respectfully disagrees with the Appellants' arguments with respect to claim 26 and respectfully maintains that Minakuchi, Webster, Fitzmaurice, Barbieri, Anderson, and Ano teach "a physical spherical display for simultaneously displaying a video stream and menu information

comprising a flat display surface and a convex physical spherical display surface, wherein the video stream is displayed on the flat display surface and the menu information is displayed on the outside surface of the convex spherical display surface,” as is claimed.

Claims 27, 28, and 40

The Appellants argue that claims 27, 28, and 40 overcome the cited art because of their ultimate dependence from claim 26. However, as described above, the Examiner respectfully disagrees with the Appellants’ arguments concerning claim 26, and thus submits that claims 27, 28, and 40 are unpatentable.

Issue 9: Claim 43 is unpatentable under 35 U.S.C. § 103(a)

The Appellants argue that claim 43 overcomes the cited art because of its ultimate dependence from claim 26. However, as described above, the Examiner respectfully disagrees with the Appellants’ arguments concerning claim 26, and thus submits that claim 43 is unpatentable.

Issue 10: Claim 44 is unpatentable under 35 U.S.C. § 103(a)

The Appellants argue that claim 44 overcomes the cited art because of its ultimate dependence from claim 26. However, as described above, the Examiner respectfully disagrees with the Appellants’ arguments concerning claim 26, and thus submits that claim 44 is unpatentable.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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August 11, 2010

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